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2017

## Annual Report, 2016-2017

Dale Bumpers College of Agricultural, Food, and Life Sciences (University of Arkansas, Fayetteville). Center of Excellence for Poultry Science

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UNIVERSITY OF  
ARKANSAS

Dale Bumpers College of  
Agricultural, Food & Life Sciences  
*Poultry Science*

Valeria Cuadros Bloch,  
recipient of the inaugural Diamond V  
Endowed Scholarship

**Research**

**Production**

**Management**

***Global Leaders Made Here***







The Center of Excellence for Poultry Science provides comprehensive programs in research, teaching and extension dedicated to improving the lives of Arkansans associated with all components of the poultry industry by generating knowledge through research and putting that knowledge to use through education.

The Center of Excellence for Poultry Science shall develop the knowledge and intellectual capacity to meet the specific needs of poultry production-processing-marketing firms to help them remain competitive in a global economy. The CEPS shall meet the needs of society regarding issues such as food safety and security, human nutrition, animal health and well-being, and environmental stewardship.

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[WWW.POULTRYSCIENCE.UARK.EDU](http://WWW.POULTRYSCIENCE.UARK.EDU)

Follow us on **INSTAGRAM**: @poultryscience and on **FACEBOOK**: Poultry Science Department, University of Arkansas

## Departmental Contacts

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Patrice Sims, Department Administrative Manager	patrices@uark.edu

**“The poultry industry is a global industry reaching all parts of the world. There are real opportunities for graduates to pursue careers in rural and urban settings on both foreign and domestic soils. In the future, there will be challenges and opportunities; careers related to poultry will be in high demand. A degree in poultry science will open doors for our students at the state and national levels as well as throughout the world.**



# Poultry Science Hosts Youth Conferences and Open Houses



High school students from around the state get to experience college life first-hand every year during the annual Poultry Science Youth Conference.

The conference is held at the Center of Excellence for Poultry Science, which is part of the University of Arkansas Division of Agriculture. Through hands-on experiences, tours and industry presentations, the conference is designed to foster interest in the poultry industry and the poultry science department in the Dale Bumpers College of Agricul-

tural, Food and Life Sciences.

Students spend one day of the conference at the Tyson Discovery Center, where they learn how food technologists develop new products. The students prepare recipes, developed by Tyson chefs, using chicken and fresh ingredients and then present the final product to the group. Several former students from the department, who are now working at Tyson, lead the hands-on event.

Gary Davis, undergraduate recruiter said, "We want



students to get a feel for how complex the poultry industry is and how many different opportunities are available to our students once they complete their studies."

Student groups return to the Center of Excellence for Poultry Science labs and test kitchen and develop their own products using the skills and information they learn during the exercises at Tyson. Each team gives their final presentation before faculty members and parents during a closing ceremony.



The Center of Excellence for Poultry Science sponsored an Open House for high school juniors, seniors, and college transfer students. Fifty participating students came from Missouri, Texas, Oklahoma, Kansas, Illinois and Arkansas and included prospective 3+1 program transfer students from the University of Arkansas at Pine Bluff and Arkansas State University.

The 3+1 Certificate of Poultry Science program allows for agriculture majors with an animal science option at UAPB to take poultry science classes at the University of Arkansas as seniors. Those courses are recognized by UAPB's



School of Agriculture, Fisheries and Human Sciences, and count toward degree requirements. At the same time, those students earn a Certificate of Poultry Science from the University of Arkansas. Completion of the certificate requires 26-28 hours of poultry science credit.

The Open House provided an opportunity for the prospective students to meet poultry science faculty, tour the poultry science facilities and learn about the many career opportunities that are available with a major in poultry science. There were three workshops that students to participated in: Cell and Molecular Biology; Embryology;

and Food Product Technology.

David Fernandez, Interim Assistant Dean for Academic Programs and Extension Livestock Specialist at the University of Arkansas Pine Bluff said "The Poultry Science Center of Excellence Open House was a real eye opening experience for our UAPB students. Having the opportunity to physically see the opportunities they would have as part of the UAF/ UAPB 3+1 Poultry Science program generated a lot of excitement and discussion about their future plans."

Students participated in the Open House and afterwards attended the Arkansas vs. LSU basketball game.



**In spring 2018 Poultry Science led the Dale Bumpers College of Agricultural, Food, and Life Sciences in percentage increases in majors and student semester credit hours.**

A strategic part of fulfilling our mission is providing the industry a pipeline of future leaders. The discipline of Poultry Science is not a default university major and with only six Poultry Science baccalaureate degree awarding institutions remaining globally, constant recruiting and highly visible student programs are key to our success. Our faculty and staff have done so, and we have undergraduate major numbers in the low one hundreds during the most recent academic year (2017-2018). Further, in spring 2018 Poultry Science led the Dale Bumpers College of Agricultural, Food, and Life Sciences in percentage increases in majors and student semester credit hours. Traditional recruiting (high school visits, FFA judging aid, and our youth conference) and

non-traditional recruiting (Poultry Science open houses) methods have all increased. Community college recruiting efforts have increased, and both of our in-state 3 + 1 programs have been converted from a certificate/degree program to a program awarding two degrees (i.e., the University of Arkansas and either Arkansas State University or the University of Arkansas at Pine Bluff). Our students are flourishing as the Poultry Science degree program prepares students for all aspects of vertical integrated poultry industries, graduate school, or pre-professional schools.

With the loss of Drs. Bramwell, Christensen, Thaxton, and Watkins, poultry faculty engaged in extension activities have been reduced. However, in addition to working with youth, stakeholders, and the Arkansas poultry industry, the extension faculty have conducted a record number of workshops, trainings, and short courses. A faculty search is underway with the objective to hire an individual with applied poultry management experience. And to cap off 2016, Dr. Susan Watkins was named The Poultry Federation Industry Leader of the Year: an honor never before awarded to an extension faculty at the Center of Excellence for Poultry Science.

This review highlights the diverse array of graduate student and faculty research in the publication section. Numerous graduate students received certificates and awards for outstanding research presented at local, national, and international venues: a testament to the high quality of



Dr. Mike Kidd, Center Director and Poultry Department Head

graduate students and strong faculty mentorship. In order to support research, faculty obtained just under \$10 million in 2016 and just over \$5million in grant funds in 2017. Of particular reference, in 2017 over \$2 million of the grants received were from industry.

Facility improvements at the poultry research farm and poultry health laboratory located at the Arkansas Agriculture Experiment Station are being realized. The generous lead gift from Tyson Foods has led to matches from Cargill, Cobb, George's, and Simmons. These farm improvements to aid in research relevance are central to us fulfilling our Land Grant mission, and we are thankful for our industry support.





# 3+1 Poultry Science Program Gained Momentum in 2017



**With only six remaining universities offering bachelor's degrees in poultry science in the U.S., we must do everything possible to recruit students into our program so the Arkansas poultry industry has a pipeline of future leaders.**

**This agreement is a testament to the joint collaborative efforts that created a program to support our largest agricultural commodity – the Arkansas poultry industry and its family farmers.**

– Mike Kidd

Director, Center of Excellence for Poultry Science and  
Department Head, Poultry Science Department



Above, back row, L to R: Dr. Obahiah Njue; Dr. Nick Anthony; Dr. Muthusamy Manoharan; Dr. Mike Kidd; Dr. Deacue Fields III; Patrice Sims; Dr. Robert Carr, Jr.; Dr. James Coleman; front row, L to R: Chancellor Joseph Steinmetz; Dr. Laurence Alexander

In 2014 a 3+1 Certificate of Poultry Science program was created and made available to University of Arkansas Pine Bluff seniors from the Center of Excellence for Poultry Science. The program allows for agriculture majors with an animal science option at UAPB to take poultry science classes at the University of Arkansas as seniors. Those courses are recognized by UAPB's School of Agriculture, Fisheries and Human Sciences, and count toward degree requirements. At the same time, students earn a Certificate of Poultry Science from the University of Arkansas. This program will help fill an industry need for more graduates in poultry science. In May 2016, Paula Johnson became the first student to receive a 3 + 1 Certificate of Poultry Science. **As of 2018 this certificate is an actual transfer degree.**

In 2017 a memorandum of understanding was formed with Arkansas State University, establishing a second 3 + 1 Program in Arkansas. The A-State University of Arkansas 3 + 1 Program is a Dual Bachelor's Degree program wherein the first three years of study will be completed at A-State, and the final year of study will be completed at the University of Arkansas in Fayetteville. Students participating in the program will be undergraduate students registered at A-State majoring in Animal Science. Completion of the program will require 34 hours of poultry science credit.

Additionally, Ozark Mountain Poultry and Peco Foods have established scholarships to support the 3+1 program. The Ozark Mountain Poultry Transfer Scholarship and the Peco Foods Transfer Scholarship provide financial support for Arkansas State University students seeking the dual transfer degrees. Recipients will be selected by the U of A and chosen from A-State seniors enrolled in a minimum of 15 hours at the U of A.



Right: Makenly Coles graduated from the University of Arkansas in May 2018 with a Poultry Science degree and from Arkansas State University with a degree in Animal Science as well.



Above: Paula Johnson became the first student to complete the 3+1 Certificate of Poultry Science (in a partnership with the University of Arkansas at Pine Bluff) and is now working on a master's degree in poultry science at the U of A.



Above, L to R: Terry Bumgardner; Patrice Sims; Mike Evans; David Hundley; Dr. Lynita Cooksey; Dr. Doug Whitlock, Chancellor, Retired; Dr. Lona Robertson; Dr. Timothy Burcham; Makenly Coles; and Bud Kennedy.



A group of students from UAPB that visited the University of Arkansas in April 2018 to learn more about the Department and the 3+1 Program. In addition to informational meetings, they spent the day touring the building, the farm and the hatchery.



A photograph of two young women, Xiaogi Ma and Dan Pan, from the South China Agriculture University. They are outdoors, sitting at a dark wooden table. Xiaogi Ma is standing behind the table, leaning over, wearing a dark purple long-sleeved shirt. Dan Pan is sitting at the table, wearing a blue denim shirt over a black and white striped shirt, and glasses. She is holding a pen and looking at a notebook. The background is a grassy field with trees and a fence. The text is in the top right corner.

**Xiaogi Ma (left) and Dan Pan (right), from the South China Agriculture University, are participating in the 3+1 Poultry Science Program with China. They each have completed a degree in Animal Medicine from the South China Agriculture University and will receive a Certificate of Poultry Science at the completion of the 2017-2018 school year.**



# Departmental Resources



## The Hatchery



- Four incubators (5,040 setting capacity; total setting capacity of 20,160)
- Two hatchers with a 5,040 hatch capacity
- Incubators and hatchers are regulated with PS 500 Jamesway controllers

The hatchery functions with sets on Tuesdays, transfers on Fridays and hatches on Tuesdays. Full capacity sets occur, but the hatchery typically runs with multiple sets with overlapping hatch dates to accommodate numerous faculty protocols.

## The Feed Mill



### Pelleting

- 2,000-vertical-pound mixer
- 1,000-pound ribbon mixer
- 500-pound mixer
- 250-pound double ribbon mixer

- 100-pound ribbon mixer
- 100-pound vertical mixer
- 50-pound tub mixer
- 50-pound vertical mixer

### Pelleting

- Production pelleting: 2,000 pounds per hour
- Laboratory pelleting: 100 pounds per hour



## The Processing Plant

### Processing

- 13-bird-per-minute processing line
- Mechanic and manual evisceration capabilities
- On-site incinerator

### Deboning

- Hot carcass or chilled carcass manual deboning
- Electronic data capture (yields, food quality, and food safety data capture capabilities)

### Further Processing

- Equipment includes oven, fryer, rotisserie, smokehouse, former, vacuum tumblers, injector, mixer/grinder, CO<sub>2</sub> mixer, bowl chopper, and slicer.



## The On-Campus Poultry Research Farm

### Broiler Facilities

- 8 houses ranging from 1,400-9,600 sq. feet
- 24-96 pens

### Broiler Breeder

### Facilities

- 4 broiler breeder facilities ranging from 5,000 to 6,400 square feet
- 245 - 1,140 cages

### Battery Cage Facility

- 4,000 square feet
- 12 batteries with 144 total cages
- Several other facilities are used for battery work with portable batteries



## The Applied Broiler Research Unit - Savoy, AR

- 6 flocks sold
- Averages for the 6 flocks: feed conversion- 1.72; age- 43; average weight- 6.18 pounds; dollars/lb- 0.0609; livability- 94.08; condemnation- 0.79%; average pay per flock- \$27,718.61; total pay- \$166,311.70

Because the genetics of poultry (broilers, layers, and turkeys) improves every year and fewer universities are investing in farm infrastructure, we feel it is critical to improve and maintain our facilities as a research resource that provides results that are relevant to practice.

Because the genetics of poultry (broilers, layers, and turkeys) improves every year and fewer universities are investing in farm infrastructure, we feel it is critical to improve and maintain our facilities as a research resource that provides results that are relevant to practice.

## The John Kirkpatrick Skeeles Poultry Health Lab



The research focus areas of this laboratory are related to persistent and emerging major disease problems of the US poultry industry, the

laborator is capable of bio-containment of many poultry pathogens. This facility, first opened in the early 1900s, now houses approximately 20 scientists, staff, and graduate students, with laboratories and animal facilities equipped for all aspects of poultry disease research.

The JKS Poultry Health Laboratory is directed by Dr. Billy Hargis in coordination with Dr. Guillermo (Memo) Tellez. The general focus of the laboratory is on new and cutting-edge interventions for persistent and emerging infectious poultry disease problems facing the US industry, with an emphasis on interventions that are sustainable in terms of cost, environmental impact, animal health and well-being and consumer health and safety. The laboratory partners with scientists and veterinarians throughout the poultry industry and with several major research institutions worldwide with regard to emerging and persistent poultry disease threats.



## Cargill funds poultry research center

(article reprint from MEAT+POULTRY)

FAYETTEVILLE, Ark. — Cargill has donated \$150,000 to fund a poultry research center on the University of Arkansas System Division of Agriculture farm north of the Fayetteville, Arkansas, campus. Tyson Foods provided matching dollars provided as part of a \$1.3 million gift to fund various improvements to the Division of Agriculture's farm. The 4,200-sq.-ft. facility will be named the Cargill Poultry Research Center. Poultry health researchers, flock management specialists and nutritionists within the Division of Agriculture, including graduate students and post-doctoral employees will research alternatives to antibiotics to keep poultry healthy, according to Cargill. Researchers will be evaluating products currently available, as well as developing probiotics and other products for commercialization.

"Cargill is pleased to support of the work being done by the Division of Agriculture," said Dr. Brian Wooming, Cargill turkey veterinarian based in Springdale, Arkansas. "Our goal is to continuously work toward reducing the use of antibiotics in animal agriculture and the work that will be done at this new facility is essential to helping achieve that objective. We are proud to be part of this effort."

Tapped to lead the center is Billy Hargis, veterinarian, Ph.D. and director of the Poultry Health Lab for the Center of Excellence for Poultry Science at the Division of Agriculture.

Above: Dr. Mark Cochan visits with John Tyson and Provost Coleman at the Don Tyson Center for Agricultural Sciences.

Hargis joined the Center of Excellence for Poultry Science in 2000. His research areas are poultry health, food safety intervention and poultry immunology and endocrinology. He was named a Poultry Science Association fellow in 2015

and distinguished professor in 2017.

A groundbreaking ceremony for the center was held April 19.





# Department of Poultry Science Faculty



Michael T. Kidd  
Director, Center of Excellence for Poultry Science; Department Head, Dept. of Poultry Science  
Ph.D. (1994), North Carolina State University, Raleigh North Carolina  
M.S. (1991), University of Arkansas,

Fayetteville, Arkansas

B.S.A. (1990), University of Arkansas, Fayetteville, Arkansas



Nicholas B. Anthony  
Poultry Breeding & Genetics  
Ph.D., Genetics (1989), Virginia Tech  
M.S., Poultry Science, Ohio State University  
B.S., Poultry Science (1983), Ohio State University

Research Areas: Line selection for muscle quality and disease resistance



Walter Bottje  
Physiologist  
Ph.D. (1984), University of Illinois  
M.S. (1978), Southern Illinois University  
B.S., Zoology (1976) (minor in Chemistry)

Research Areas: Cellular bioenergetics



Craig Coon  
Poultry Nutritionist  
Ph.D., Biochemistry and Biophysics (1973), Texas A&M University  
M.S., Plant Physiology and Biochemistry (1970), Texas A&M University

B.S., Animal Science (1966), Texas A&M University

Research Areas: Broiler breeder nutrition and body composition



F. Dustan Clark  
Extension Poultry Health Veterinarian  
Associate Center Director for Extension  
Ph.D., Veterinary Pathobiology (1991), Texas A&M University

M.S., Veterinary Microbiology (1984), Texas A&M University

D.V.M. (1980), Texas A&M University

Research Areas: Poultry health, disease recognition and biosecurity



Dan J. Donoghue  
Preharvest Food Safety and Toxicology  
Post-Doctoral Fellowship, Rutgers University  
Ph.D., Poultry Science, Texas A&M University

M.S., Animal Science, Brigham Young University

B.S., Health Science, Medical University of South Carolina

Research Areas: Poultry pathogen and residue reduction



Sami Dridi  
Avian Endocrinology and Molecular Genetics  
Ph.D., Molecular and Cellular Biology (2001), INPL-INRA, France  
MAS, Agronomic Sciences, Molecular and Cellular Biology

(1998), INPL France

Engineering degree, Animal Science (1995), ESAM Tunisia

B.S., Math and Science (1990), School of Mateur, Tunisia

Research Area: Peripheral and central molecular mechanisms involved in the regulation of energy homeostasis and fat metabolism in avian species for the improvement of growth efficiency



Gisela F. Erf  
Immunologist, The Holder of Tyson Professorship in Avian Immunology  
Ph.D., Immunology (1988), Cornell University  
M.S., Reproductive Physiology (1983), University of Guelph,

Canada

B.S., Animal Science (1981), University of Guelph, Canada

Associate Degree (1979), Nova Scotia Agricultural College

Research Areas: Innate and adaptive immunity and disease susceptibility



Casey M. Owens-Hanning  
Poultry Processing and Products  
Ph.D., Food Science and Technology (1999), Texas A&M University  
M.S., Food Science and Technology (1996), Texas A&M University  
B.S., Poultry Science (1994), Texas

A&M University

Research Areas: Processing techniques and muscle quality



Billy M. Hargis  
Director Poultry Health Lab and Veterinarian  
D.V.M. and Ph.D., University of Minnesota  
M.S., Poultry Science (1983), University of Georgia

B.S. (1980), University of Minnesota

Research Areas: Poultry health and vaccine development



Byung-Whi Kong  
Functional Genomics and Molecular Virologist  
Ph.D., Molecular Virology, University of Minnesota  
M.S., Molecular Cell Biology, University of Minnesota

B.S., Animal Science, Korea University, S. Korea

Research Areas: Virus genetic engineering



Wayne J. Kuenzel  
Physiologist/Neurobiologist  
Ph.D., Zoology, University of Georgia  
M.S., Biology, Bucknell University  
B.S., Biology, Bucknell University  
Research Areas: Poultry neurobiology and behavior



Young Min Kwon  
Microbiologist  
Ph.D., Poultry Science (2000), Texas A&M University  
M.S., Animal Science (1994), Seoul National University, South Korea  
B.S., Animal Science (1992), Seoul

National University, South Korea

Research Areas: Microbial genomics



Yanbin Li  
Professor of Biological Engineering, Tyson Endowed Chair in Biosensing Engineering  
Ph.D., Agricultural Engineering (1989), Pennsylvania State University

M.S., Agricultural Engineering (1985), University of Nebraska-Lincoln

B.S., Agricultural Engineering (1978), Shenyang Agricultural University

Research Areas: Biosensing engineering

# Department of Poultry Science Faculty



Deacue Fields, Dean of Dale Bumpers College of Agricultural, Food and Life Sciences talks with visiting FFA students.



John Marcy  
Extension Food Scientist  
Ph.D., Food Technology, Iowa State University  
M.S., Food Technology, Iowa State University  
B.S., Food Technology and Science,

University of Tennessee

Research Areas: Processing and quality control



Douglas Rhoads  
Director of Interdisciplinary Graduate Program in Cell and Molecular Biology  
Ph.D. (1986), Kansas State University  
Research Areas: Poultry molecular

genetics



Samuel Rochell  
Assistant Professor, Nutrition  
Ph.D. (1986), Kansas State University  
Research Areas: Poultry nutrition

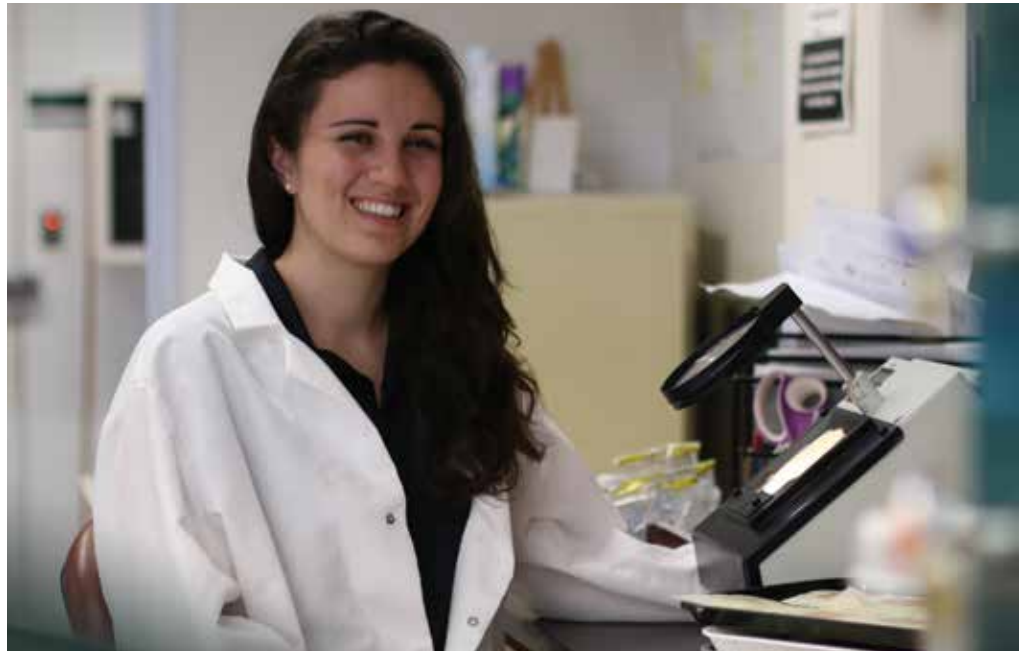


Xiaolun (Jack) Sun  
Molecular Biology  
Research Areas: Avian physiology;  
Avian virology; Immunology;  
Poultry health



Beth Rumley  
Senior Staff Attorney  
B. A., J.D., L.L.M.  
Juris Doctor, University of Toledo College of Law  
Masters of Laws, University of Arkansas College of Law

Areas of Interest: Agricultural law; natural resources law; animal agriculture law; food law; land use



Our faculty are the best in the world. They are researchers for the Arkansas Agricultural Experiment State and the Cooperative Extension Service and their innovative research moves right into the classroom. Students have the opportunity to learn from award-winning scientists and, if interested, to conduct their own undergraduate research.

## USDA/ARS Faculty



Annie M. Donoghue  
USDA-ARS Research Leader  
Ph.D., Physiology (1991), F. Edward Hebert School of Medicine, Uniformed Services University of Health Sciences  
M.S., Animal Science (1986 ),

Texas A&M University

B.S., Zoology (1983), San Diego State University

Research Areas: Poultry pathogen reduction



Narayan C. Rath  
Physiologist, Research Professor  
Ph.D., Zoology with specialization in Reproductive Endocrinology, University of Delhi, India  
M.S., Zoology with specialization in Reproductive Endocrinology,

University of Delhi, India

Research Areas: Poultry leg functionality



Philip A. Moore, Jr.  
Soil Chemist  
Ph.D., Marine Sciences (1987), Louisiana State University  
M.S. in Agronomy (1981), University of Arkansas  
B.S., Soil Science (1978),

University of Arkansas

Research Areas: Poultry waste management



# Faculty Achievements, Awards & Honors 2016-2017

## 2016

Poultry science department faculty received awards during the 2016 Poultry Science Association meeting.

Casey M. Owens, Ph.D., Associate Professor of Poultry Processing and Products, was given the National Chicken Council Broiler Research Award. This award, instituted by the National Chicken Council, is given for distinctive research work that has a strong economic impact on the broiler industry. In order to receive this award, research may be conducted in any major discipline and is evaluated primarily on the economic influence the work has had or will have on the industry. The award is given for research published in the preceding five calendar years.

Also receiving an award were Lizhou Xu, Zach Callaway, Ronghui Wang, Hong Wang, Michael Salvik, Andrew Wang and Yanbin Li from the American Society of Agricultural and Biological Engineers for their article: A Fluorescent Aptasensor Coupled with Nanobead-Based Immunomagnetic Separation for Simultaneous Detection of Four Foodborne Pathogenic Bacteria.

Dr. Susan Watkins, University of Arkansas Poultry Extension Specialist, was presented with the 2016 Industry Leader of the Year Award by The Poultry Federation at the 57th Annual Poultry Festival held June 17-18 in Rogers, AR. The Industry Leader of the Year Award is presented to recognize the outstanding achievements of poultry and egg business executives as well as their contributions to the industry.

Dr. Watkins was also named a Distinguished Professor in the Division of Agriculture, a new title and honor for her work in poultry extension.

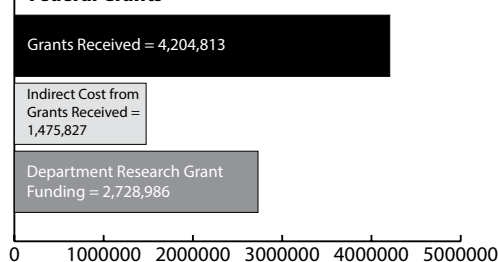
Several University of Arkansas faculty participated in the 25th World's Poultry Congress held in Beijing, China September 5-9. The multidisciplinary scientific program of the WPC addressed a wide range of subjects and provided a unique and comprehensive platform for sharing and discussing the latest developments in scientific research and technology for poultry production worldwide. Speakers from the University of Arkansas included Dr. Craig Coon, poultry nutritionist, who addressed broiler breeder body composition in breeders; Dr. Narayan Rath, USDA/ARS Physiologist and research professor, who spoke on the impact of feeding egg membrane material to chicks and the noted improvements in the health of chicks; and Dr. Billy Harris, professor and director of the JKS Poultry Health Laboratory who took part in a Novus forum that addressed breeder and broiler nutrition to manage emerging enteric and structural health challenges.



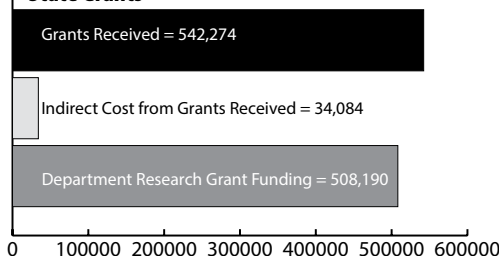
Dr. Craig Coon, Professor of Poultry Nutrition, speaking at the 2017 Arkansas Nutrition Conference.

### Poultry Science Grants FY 2017

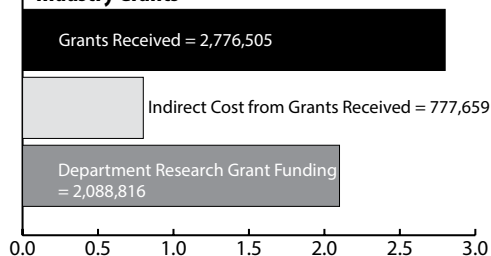
#### Federal Grants



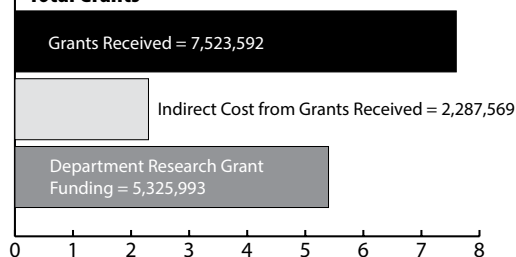
#### State Grants



#### Industry Grants



#### Total Grants



### Poultry Science Grants FY 2016

Total number of grant proposals submitted = 88

Total number of grants and contracts received = 60

Amount of grants money received in FY2016 = \$9,570,928

## 2017

Dr. Casey Owens was promoted to the academic rank of Professor.

Dr. Billy Hargis was promoted to the academic rank of Distinguished Professor.

Dr. Sami Dridi was promoted to the academic rank of Professor.

The status of Poultry Science Association Fellow is one of the highest distinctions a PSA member can achieve. Three poultry science faculty received that distinction in 2017:

- Walter G. Bottje, Physiologist
- Steven C. Ricke, Professor, Donald "Buddy" Wray Chair in Food Safety
- Yvonne Vizzier-Thaxton, Director (retired), Center for Food Animal Wellbeing

# Faculty Achievements, Awards & Honors 2016-2017

Only two PSA Extension awards are given each year and the University of Arkansas received both.

- F. Dustan Clark received the Phibro Extension Award. This award is given to a member of the Poultry Science Association for conducting an outstanding program of work in the area of poultry extension and outreach during a five-year period.
- Karen D. Christensen received the Poultry Science Association Early Achievement Award for Extension. This award is given to recognize the achievement of Poultry Science Association members in the early stages of their career in poultry extension.

Additional 2017 PSA Honors and Award Winners:

- Billy Hargis, director of the JKS Poultry Health Laboratory and holder of the Tyson Endowed Chair for Sustainable Poultry Health, was elected second vice president of

the Poultry Science Association. The PSA presidency is a four-year term beginning with the second vice presidency and ending as past president. Hargis is now in order to become PSA president in three years.

- Malea G. Frank, who received her Ph.D. under the direction of Susan Watkins, received the Tyson Foods, Inc. Early Achievement Award.
- Paul Tillman, who received his Ph.D. under the direction of Park Waldroup, received the USPOULTRY Distinguished Poultry Industry Career Award.
- Keying Zhang, who spent her sabbatical in Park Waldroup's lab, received the Maple Leaf Duck Award.

See the list of Peer-Reviewed Journal Articles, Books and Book Chapters on page 14.



Lona J. Robertson, Associate Dean for Dale Bumpers College of Agricultural, Food and Life Sciences presents Joshua Flees with his Outstanding Graduate Student award.

## Student Achievements, Awards & Honors 2016-2017

### 2016

Students of the University of Arkansas Poultry Science Department received prestigious awards at the 2016 Poultry Science Association Annual Meeting held July 11-14 at the Hilton New Orleans Riverside in New Orleans, LA.

Student Research Certificates of Excellence are awarded to students who present high-quality research papers at the annual meeting.

- Kentu Lassiter, directed by Walter Bottje, received a Certificate of Excellence for his oral presentation in the Molecular and Cellular Biology Section titled "Hormone Receptors in Mitochondria of QM7 Cells and Breast Muscle of Quail and Broilers."
- Austin Decker, directed by Sami Dridi, received a Certificate of Excellence for his presentation in the Molecular and Cellular Biology Section titled "Expression of neuropeptide Y system in avian liver and its role in hepatic lipogenesis." Austin is an undergraduate student who competed in the graduate student competition.

Three students from Poultry Science were recognized for 2016-17 academic achievement at the Dale Bumpers College of Agricultural, Food and Life Sciences Honors and Awards Banquet.

- Lesleigh Beer was recognized at the Dale Bumpers as the 2016-17 Poultry Science Outstanding Senior Student
- Samantha Cox was awarded the 2016-17 Poultry Science Outstanding Masters Student
- Guru Nagarajan was recognized as the 2016-17 Poultry Science Outstanding Doctoral Student

The Arkansas Nutrition Conference is an annual educational event and is coordinated by the Feed Manufacturers Committee of The Poultry Federation. The 2016 conference was held on September 7-9, at the Embassy Suites in Rogers, Arkansas. Students winning prizes for their poster presentations based on their current research at the 2016 Arkansas Nutrition Conference were:

- Michael Schulumbohm: "The Effects of Dietary Amino Acids, Dietary Metabolizable Energy, and Broiler Strain on Incidence of Breast Muscle Myopathy at 42 and 58 Days"
- Katie Hilton: "The effect of heat production and net energy of diets varying in levels of amino acids and metabolizable energy on broiler strain"
- Samantha Cox: "Water Quality Laboratory: Providing the poultry industry with assistance for evaluating drinking water"
- Barbara De Almeida Mallmann: "Field performance of Cobb MX × 500 male and female broilers as affected by amino acid density in a controlled floor pen research setting"

### 2017



Lesleigh Beer (left) was awarded first place in the 2017 College Student Career Program's Student of the Year competition held in conjunction with IPPE. Senior poultry science major Brock Daniels (right) was awarded second place in the same competition at the 2018 IPPE meeting.

Receiving prestigious awards at the 2017 Poultry Science Association annual meeting held July 17-20 in Orlando, Florida were, for Outstanding Oral Presentation:

- Katie Hilton, under the direction of poultry nutritionist Craig Coon, for presenting: Comparison of two net energy calculations of two broiler strains with varying levels



# Student Achievements, Awards & Honors 2016-2017

of metabolizable energy in two different temperatures.

- Basanta Raj Wagle, under the direction of professor Dan Donoghue, for presenting: Phytochemicals reduce biofilm formation and inactivates mature biofilm of *Campylobacter jejuni*. In Addition, Basanta Wagle, Winner- Best poster presentation award in Interventions, Pre and Post-Harvest Section at the 2017 Arkansas Association for Food Protection educational conference, Springdale, AR (September, 2017). Basanta Wagle, Best Paper Certificate (2017) in recognition of the research paper quality, originality and significance in modeling for the paper published in International Journal of Zoology and Research.
- Sandip Shrestha (Ph.D.), Winner- Best poster presentation award in Food Safety Including Fundamental Understanding of Pathogens at the 2017 Arkansas Association for Food Protection educational conference, Springdale, AR (September, 2017)
- Juan Caldas-Cueva, under the direction of professor Casey Owens, for presenting: Use of image analysis to identify woody breast characteristics in broiler carcasses from 7 and 10 week old commercial broilers.

Students receiving awards for Outstanding Poster Presentations in 2017 included:

- Craig Maynard, under the direction of assistant professor Sam Rochell, for presenting: Dietary amino acid responses of male Cobb MV  $\times$  700 broilers from 0 to 46 d post-hatch.
- Deepti Samarth under the direction of microbiologist Young Min Kwon, for presenting: Proteomic analysis of *Campylobacter* interaction with amoeba host.
- Craig Smardo (Honors student) for Dr. Sami Dridi, received an Honors College Undergraduate Research Grant, 2017. The title of the honors project was "Mechanistic understanding of Dicer dysregulation in osteomyelitis and BCO pathogenesis"
- Guillermo Jr. Tellez (Bumpers College Honors Student) for Dr. Sami Dridi, received an Honor College Undergraduate Research Grant, 2017. The title of his project was "Effects of phytogetic plants on gut health in broilers exposed to heat stress".
- Joshua Flees (M.S. student) for Dr. Sami Dridi, received a travel Grant for Outstanding graduate Research Talk, PSA 2017, Orlando. The title of his

presentation was "Noni-Morinda Citrifolia- modulates the expression of hepatic lipid metabolism genes in acute and chronic heat stressed broilers".

- Joshua Flees (former undergraduate student of Dr. Sami Dridi) received a Travel Grant for Outstanding Undergraduate Research Talk, IPPE 2017, Atlanta. The title of his presentation was "Noni, Morinda citrifolia, modulates the expression of hepatic lipogenic genes in chronic heat stressed broilers".
- Joshua Flees (former undergraduate student of Dr. Sami Dridi) received the Don. Sloan Undergraduate Research Award, IPPE 2017, Atlanta. The title of his presentation was "Noni, Morinda citrifolia, modulates the expression of hepatic lipogenic genes in chronic heat stressed broilers".
- Mikayla Baxter (PhD student with Dr. Billy Hargis) received the Southern Poultry Science Society (SPSS) Student Award, at IPPE Atlanta 2017. The title of her presentation was "Evaluating the effect of corn and/or rye based diets on gut health, bone strength, and body weight in modern broiler chickens".

The winners of the 2017 Arkansas Poultry Nutrition Conference Student Poster Presentations were: 1st Place, pictured: Katie Hilton (Coon)



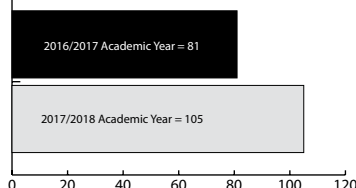
2nd Place: Josh Flees (Dridi)

3rd Place: Aly Gautier (Rochell)

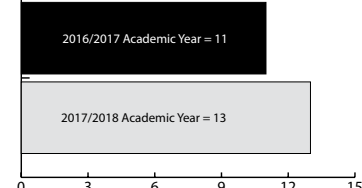
The Arkansas Nutrition Conference is an annual educational event and is coordinated by the Feed Manufacturers Committee of The Poultry Federation. The 2017 conference was held on September

6-8, at the Embassy Suites in Rogers, Arkansas.

## Poultry Science Undergraduates



## Poultry Science Minors



## Poultry Science Signs Student Exchange Agreement with Malaysian University



The Dale Bumpers College of Agricultural, Food and Life Sciences and its Department of Poultry Science at the University of Arkansas have signed a memorandum of understanding with Universiti Putra Malaysia in Selangor Darul Ehsan.

The two institutions will

develop agreements for shared activities in areas of faculty exchange and student exchange for both undergraduates and graduates.

Faculty exchanges may include residence at each institution for lecturing, research, and developing academic or administrative skills.

UPM College of Animal Science students will be able to earn a Poultry Science Certificate from the U of A while Bumpers College students may participate in summer sessions at UPM, including internships with area companies. U of A students will study Malaysian poultry production and processing practices, and culture.

UPM students can transfer to Arkansas for their senior year to complete the

certificate program, similar to recent poultry science 3-plus-1 course curriculum agreements signed with the University of Arkansas at Pine Bluff in 2013 and Arkansas State University in 2017. UPM students must be seniors and have a minimum 2.5 grade point average.

The agreement was signed in the U of A's AFLS Building on Nov. 21 by U of A Provost and Executive Vice Chancellor for Academic Affairs Jim Coleman, Bumpers College Interim Dean Lona Robertson, and poultry science department head and director of the Center of Excellence for Poultry Science Mike Kidd. Universiti Putra Malaysia was represented by Vice Chancellor Aini Ideris and department head of animal science Loh Teak Chwen.

"We're constantly looking for ways to meet the needs of the poultry industry for highly skilled and qualified graduates," said Kidd. "This is another opportunity for students from a different university to spend a year here and position themselves for a great career in poultry. It also opens the door to new opportunities for our students to go overseas and get experiences that will put them at the top of the list when applying for jobs. It's exciting to get this finalized and we're looking forward to working with UPM."

The agreement also allows for collaborative activities such as research and training, externally funded international projects, programs of consulting and evaluation, sponsorship of conferences, publications and exchange of materials.

# Student Achievements, Awards & Honors Spring 2018



On October 18, 2017 the Poultry Science Association Foundation (PSA Foundation) recognized Valeria Cuadros Bloch as the recipient of the inaugural Diamond V Endowed Scholarship. Valeria is a junior poultry science major.

"Diamond V recognizes the increasingly urgent need for young talented scientists in the feed and food industries," said Jeff Cannon, President and CEO of Diamond V, the global nutritional health company based in Cedar Rapids, Iowa. The Diamond V Endowed Scholarship, supporting a student entering their junior year and renewable for the senior year subject to satisfactory academic progress, is designed to encourage promising scholars to continue studies at the graduate level in Poultry Science. The endowed scholarship was made possible through the PSA Foundation Charting Our Course – Securing Future Leadership for Poultry Campaign (Capital Campaign).



The Poultry Science Club (above) won third place for the 2018 IPPE Student Career Scrapbook.



The University of Arkansas Poultry Judging Team finished 4th Overall at the Collegiate Poultry Judging Contest at Louisiana State University. Other awards won included: 4th place for production and 3rd place in breed selection; Mackenzie Pippin placed 3rd high individual for

breed selection and 6th place high point individual overall; Lacie Carte placed 7th high point individual overall.

Several University of Arkansas Poultry Science students received prestigious awards during The 2018 International Poultry Scientific Forum, which is also held in conjunction with IPPE. Overall there were 121 graduate student presentations and 21 undergraduate student presentations. Those winning awards from the University of Arkansas were:

- Freshman runner up for the Don Sloan Research Award - Guillermo Tellez



- Three students won Outstanding Southern Poultry Science Society Graduate Student Speaking Awards: Craig Maynard, Paula Johnson and Joshua Deines
- Overall Best Presentation in the Southern Society for Avian Diseases - Brittany Graham

***Pictured above are, l to r, Craig Maynard, Joshua Deines, Guillermo Tellez, Paula Johnson and Brittany Graham.***



Guillermo Tellez, right, is the first student in the Department of Poultry Science to receive the Dr. James H. and Shirley H. Denton Memorial Scholarship. He received the scholarship in a surprise presentation at the recent Poultry Science Club End-of-Year Banquet. The scholarship was established through the

Poultry Science Association Foundation by Denton in memory of his wife, Shirley, who is fondly remembered by both students and faculty alike for her commitment to the activities of the Poultry Science students and her effort to create a family environment for the young people in the university community. The scholarship is intended to support a rising junior or who has chosen Poultry Science as their field of study and has expressed interest in pursuing graduate education for the M.S. and Ph.D. and is renewable for the senior year. Denton, left, was in attendance to present the scholarship to Tellez. "Mr. Tellez is currently enrolled in the Honors Program where he has an active research project," Denton said. "He exhibits outstanding potential as a future scientist."

Deepti Samarth won third place in the graduate division of the Bumpers College Honors Student Board's annual poster contest.



Zach Rose, Basanta Raj Wagle, Joshua Flees, Dr. Mike Kidd, Dr. Sam Rochell and Dr. Sami Dridi.

Each year Bumpers College holds its honors and awards reception where many of the college's top students are recognized. This year the Poultry Science Department Outstanding Senior was Zach Rose and Outstanding Graduate Students were Joshua Flees, M.S. and Basanta Raj Wagle, Ph.D. Pictured are, l to r: Dr. Susan Watkins,



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## Poultry Science Extension Short Courses and Workshops

### 2016 Workshops, Trainings & Short Courses

- Advanced HACCP. January 12-13
- UACES/ USDA/ APHIS/ VS. January 20-22, 2016.
- HACCP Roundtable. January 21.
- Biosecurity Principles Zoom Conferences for Arkansas County Agents. January 25; February 15, 16, 18, 19, and 23.
- Food Safety Preventive Controls for Human Foods. February 9-11.
- Poultry and Biosecurity Information Booth, Arkansas Flower and Garden Show. February 26-28.
- The Food Safety Conference, Branson Convention Center. March 8-9.
- Baking Fundamentals. March 14-18.
- Food Safety Preventive Controls for Human Foods. March 21-23.
- UA Division of Agriculture/P. Allen Smith Garden Home/ Poultry Workshops. April 2; September 17.
- UA Division of Agriculture Poultry Diseases and Biosecurity Educational Workshops.

- March 15; April 9; April 21; April 25; June 24; July 18; September 7; September 23.
- NPIP Blood Testing Schools for Commercial Testing Agents. April 4, 26.
- NPIP Blood Testing Schools for Private Testing Agents. April 5, 13, 27.
- Poultry Educational Outreach. District Conferences. April 5, 7, 20.
- HACCP Roundtable. April 13.
- Food Safety Preventive Controls for Human Foods. April 19-21.
- Culinary Arts Fundamentals. May 16-20.
- 4 Day Tyson Foods Poultry Short Courses. April 7; June 13; July 27; October 19.
- UA Division of Agriculture Cooperative Extension Service and Missouri Extension Service Poultry Diseases and Biosecurity Educational Workshop. April 30.
- UA Division of Agriculture/Arkansas Cooperative Extension Service Poultry Diseases, Necropsy and Biosecurity Workshops for Noves Horizontes. Nampula, Mozambique Africa. May 30-31; June 1-6.
- Food Safety Preventive Controls for Human Foods. June 7-9.
- UA Division of Agriculture Arkansas Cooperative Extension Service 4H Veterinary



Science Camp. June 29.

- HACCP Roundtable. July 7.
- Poultry Husbandry, Diseases, and Biosecurity Information Booth. July 23-25.
- Food Safety Preventive Controls for Human Foods. August 16-18.
- Global/Advanced Culinary Arts. September 12-16.
- GMPs, SOPs and HACCP. September 21-22.
- Arkansas Poultry Processors Workshop. October 3-4.
- UA Division of Agriculture Cooperative Extension Service/Texas AgriLife Poultry Husbandry and Diseases Workshop. October 8.
- Advanced HACCP. October 11-12.
- HACCP Roundtable. October 13.
- Food Safety Preventive Controls for Human Foods. October 18-20.
- Platinum Brooding Workshop. October 19.
- UA Extension/US Grain Council Poultry Short Course for Indonesia, Malaysia, and Burma group. October 27.
- County Fair Biosecurity Educational Outreach Efforts. Weekly from August 14-October 1.
- Culinary Arts Fundamentals, Kerry North America, Beloit, WI. November May 7-11.

Arkansas Poultry Chain Program: 4-H members are given the opportunity to order a set of Hyline Brown chicks (up to 20) which are raised and shown at county, district and state fairs. There were approximately 31,000 birds distributed in the program this year. Biosecurity and Poultry care information is distributed to each participant.

District and State BBQ Contests: There are four district BBQ contests held for 4-H members. The four district contests are held at Fayetteville, Jonesboro, Arkadelphia and Little Rock. In addition, another BBQ contest is held at the Arkansas State fair in October. It is the RJ Adams memorial BBQ contest.

Embryology in the classroom: Incubators and fertile eggs are placed in preschool to high school classes throughout Arkansas

The UA Extension Poultry Education Trailer is a project used at local schools interested in learning about the life cycle of poultry and its importance in the Arkansas economy.

### 2017 Workshops, Trainings & Short Courses

- HACCP Roundtable. January 12.
- Biosecurity Principles Zoom Conferences for Arkansas County Agents. January 20; February 1, 3, 15, 20, 22; March 1, 7, 9, 14.
- UA Division of Agriculture Cooperative Extension Service Poultry Diseases and Biosecurity Educational Workshops. January 12, 27, 30; February 10, 21; March 7; April 4, 6, 22; November 9, 16; December 11.
- Baking Arts Fundamentals. February 6-10.
- Poultry and Biosecurity Information Booth, Arkansas Flower and Garden Show. February 24-26.
- Baking Arts Fundamentals. March 14-18.
- UA Division of Agriculture/ P. Allen Smith Garden Home/ Poultry Workshops. April 2; August 16.
- UA Division of Agriculture Cooperative Extension Service Bee Medicine Training for Veterinarians. February 18; May 12; September 23.
- GMPs, SOPs and HACCP. February 21-22.
- Food Safety Preventive Controls for Human Foods. March 14-16.
- UACES/ USDA/ APHIS/ VS Poultry 4-day Short Course for VMOs and AHTs. March 28-31.
- 4 Day Tyson Foods Poultry Short Courses. April 3-6; June 12-15; July 24-27; October 16-19.
- HACCP Roundtable. April 11.
- The Food Safety Conference. April 12-13
- NPIP Blood Testing Schools for Private Testing Agents. April 12, 21, 28.
- HACCP Butterball Turkey. April 20.
- NPIP Blood Testing Schools for Commercial Testing Agents. April 20, 27.
- Culinary Arts Fundamentals. May 16-20.
- Food Safety Preventive Controls for Human Foods. May 23-25.
- UA Extension faculty Poultry seminars in China. June 3, 5.
- Biosecurity- Extension Educational Outreach, KFC/YUM Foods International group. June 22.



- UA Division of Agriculture Arkansas Cooperative Extension Service 4H Veterinary Science Camp. June 27.
- HACCP Roundtable. July 13.
- UA Division of Agriculture Arkansas Cooperative Extension Service Teal Conference for High School Ag and Science Teachers. July 13-14.
- Global/Advanced Culinary. July 17-20.
- UA Extension/Boehringer-Ingelheim Poultry Short Course for Sunner Poultry. July 31-August 4.
- Broiler Pathology/Disposition Workshop. August 8.
- Nepal, Bangladesh, India, and Sri Lanka group. Tour and Poultry Workshop. August 11.
- Global/Advanced Culinary Arts. September 11 – 15.
- UA Division of Agriculture Arkansas Cooperative Extension Service. Argentina Visitors Poultry Short course. October 4.
- Advanced HACCP. October 10-11.
- HACCP Roundtable. October 12.
- Arkansas Poultry Processors Workshop. October 17-18.
- Platinum Brooding. October 18.
- Culinary Arts Fundamentals. October 23-27.
- UA Division of Agriculture Arkansas Cooperative Extension Service and OSU Cooperative Extension Service. Poultry seminars. November 3-4.
- Food Safety Preventive Controls for Human Foods. November 14-16.
- UACES/ USDA/ APHIS/ VS Poultry 4-day Short Course for VMOs and AHTs. November 28-December 1.
- Arkansas Poultry Chain Program: 4-H members are given the opportunity to order a set of Hyline Brown chicks (up to 20) which are raised and shown at county, district and state fairs. There were approximately 32,000 birds distributed in the program this year. Biosecurity and Poultry care information is distributed to each participant. 1487 packets.
- Poultry Judging: State 4-H Contest was held at the State O'Rama in Fayetteville in early August
- District and State BBQ Contests: There are four district BBQ contests held for 4-H members. The four district contests are held at Fayetteville, Jonesboro, Arkadelphia and Little Rock. In addition, another BBQ contest is held at the Arkansas State fair in October. It is the RJ Adams memorial BBQ contest.
- Embryology in the classroom: Incubators and fertile eggs are placed in preschool to high school classes throughout Arkansas. The UA Extension Poultry Education Trailer is a project used at local schools interested in learning about the life cycle of poultry and its importance in the Arkansas economy.

